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**Larry T. Shrout – 919/266-8625**

DATE: **March 8, 2007**

TO: **Examiner Hanh V. Tran** FAX NO: **(571) 273-8300**  
CC: FAX NO:  
FROM: **Larry T. Shrout** FAX NO: **(919) 266-8397**

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**PLEASE DELIVER IMMEDIATELY**

Examiner Tran,

Please find attached the following documents:  
Cover sheet for amended appeal brief consisting of 1 page.  
Amended Appeal Brief for Application No. 10/003,370, consisting of 32 pages.

Best Regards,

**Larry Shrout**  
Patent Agent  
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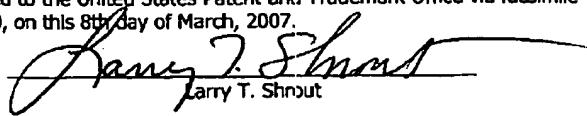
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CERTIFICATE UNDER 37 CFR 1.8

I hereby certify that this document is being transmitted to the United States Patent and Trademark Office via facsimile addressed to Examiner Hanh V. Tran at 571-273-8300, on this 8th day of March, 2007.

  
Larry T. Shnout

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCE

IN RE PATENT APPLICATION OF:	)	EXAMINER: John P. Fitzgerald
Hamid S. Abroy	)	
	)	
SERIAL NO.: 10/003,370	)	GROUP ART UNIT: 3637
	)	
FILED: November 15, 2001	)	ATTORNEY DOCKET: LEX-80 (27174.00)
	)	
FOR: Arc Stack Housing with Arc Plate	)	
Latching Mechanism	)	

BRIEF ON APPEAL UNDER 37 C.F.R. §1.192

Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

Sir:

Responsive to the Notification of Non-Compliant Appeal Brief dated March 2, 2007, an amended Appeal Brief, as discussed with Examiner Hanh Tran on March 8, 2007, is provided herein. This paper is being filed within the 30 day time period set forth in the Notification of Non-Compliant Appeal Brief.

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Serial No. 10/003,370

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCE

IN RE PATENT APPLICATION OF:	)	EXAMINER: John P. Fitzgerald
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Latching Mechanism	)	

BRIEF ON APPEAL UNDER 37 C.F.R. §1.192

Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

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UNITED STATES PATENT NO. 5,589,672

UNITED STATES PATENT NO. 5,645,329

UNITED STATES PATENT NO. 4,612,426

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Serial No. 10/003,370

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

IN RE PATENT APPLICATION OF: ) EXAMINER: John P. Fitzgerald  
Hamid S. Abroy )  
 )  
SERIAL NO.: 10/003,370 ) GROUP ART UNIT: 3637  
 )  
FILED: November 15, 2001 ) ATTORNEY DOCKET: LEX-80 (27174.00)  
 )  
FOR: Arc Stack Housing with Arc Plate )  
 Latching Mechanism )

**BRIEF ON APPEAL UNDER 37 C.F.R. §1.192(d)**

Commissioner of Patents  
and Trademarks  
Washington, D.C. 20231

Dear Sir:

Please consider the following remarks which are submitted under 37 C.F.R. §1.192.

**I. REAL PARTY OF INTEREST**

The real parties of interest are the named inventors and Square D Company, a corporation of the state of Delaware having a principal place of business at the address indicated below and being the assignee to all rights of any subsequent patent issuing from this application.

Square D Company  
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## II. RELATED APPEALS AND INTERFERENCES

There are no related appeals and interferences.

## III. STATUS OF THE CLAIMS

Claims 1-13 are rejected.

Claims 1-13 are under appeal in this brief.

## IV. STATUS OF THE AMENDMENTS

The applicant's amendment A, filed on April 15, 2003, amending claims 1 and 5 to overcome a rejection under 35 U.S.C. §112, second paragraph, amending claims 6 and 11 to more precisely define the invention and applicants arguments to overcome the Examiner's rejections under 35 U.S.C. §102 and 35 U.S.C. §103, has been entered by Examiner Fitzgerald.

The applicant's Rule 1.116 amendment filed on September 14, 2003, amending claim 2 to more precisely define the action of the stop member and claim 11 to include a restriction of original claim 9 (the back stop being in spaced relation to the first wall), canceling claims 12 and 13, and presenting further arguments to overcome the Examiner's rejections under 35 U.S.C. §102 and 35 U.S.C. §103, has not been entered by Examiner Fitzgerald base on grounds that, "the back stop being in spaced relation to the first member" raises new issues that would require further consideration and/or search.

## V. SUMMARY OF THE CLAIMED SUBJECT MATTER

The present invention, as disclosed on pages 1-5 of the specification and illustrated in figures 1-4 of the application under appeal, provides an arc stack housing 102 having resilient and deformable stop members 218 and latching members 224, for releasably securing a plurality of arc plates 402 within the arc stack housing. The housing includes

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two substantially parallel side walls 112 and 114. Each side wall includes a plurality of slots 216, which can be defined in the side wall or by securing ledges 210 extending outwardly from the side wall. The slots of one side wall are in opposed relationship to the slots of the other side wall such that an arc plate can be slidably received in a pair of opposed slots. The stop and latching members are located at opposite ends of a slot and are spaced apart from the side wall (see Figures 1 and 3). When an arc plate is slidably and fully installed in a pair of opposed slots of the arc housing, the leading edge 418 engages the stop member and the trailing edge 416 engages the latching member of that pair of slots. The stop member and the latching member are both slightly deformed in a spring like manner, thereby captivating the arc plate in the slot between them.

With respect to independent claim 1, the preamble defines an arc plate 402, that is described on page 3 in lines 7 and 8 of the specification and is shown in detail in Figure 4. The arc plate housing 102, which is the subject of the invention, is defined as including first and second support members (housing walls 112 and 114), described in detail on page 2 in lines 17-20 of the specification and illustrated generally in Figure 1 and in detail in Figures 2 and 3. The first support member 112 further defines first securing ledge 210' and it's lower surface 212', second securing ledge 210 and it's upper surface 214, which together define a slot 216. These elements are described on page 3 in lines 12-21 of the specification and shown in detail in Figure 2. The second support member 114 further defines a third securing ledge and it's lower surface, a fourth securing ledge and it's upper surface and a second slot formed by these elements. On page 4 in lines 11 and 12 of the specification, the second support member 114 is described as a mirror image of the first support member 112. Therefore, the specification reference provided above for first support member 112 also describes second support member 114. The stop member 218 is described on page 3 in lines 22 and 23 of the specification and the locking member 224 is described on page 3 in lines 26-28 of the specification. Both the stop member and locking arm are shown in detail in Figures 2 and 3. The engagement of the stop member 218 and locking member 224 with the first end 418 and second end 416, respectively, of the arc plate 402 is described on page 4 in lines 5-7 of the specification and illustrated with respect to arc plate 402 in Figure 2.

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With respect to dependent claim 2, the stop member 218 is further defined as being deformable, as described on page 3 in lines 22-26 of the specification.

With respect to dependent claim 3, the resilient locking member 224 and it's elements are claimed. The locking member is described in detail starting on line 26 of page 3 continuing through line 4 of page 4. Lines 16-19 of page 4, further describe the integrally molded arc stack housing 102 as including the ledge surfaces 212 and 214, locking arm 224 and locking tab 222, thereby fixedly attaching at least one end of the locking arm to the securing ledge 210. This construction is shown in Figures 1 and 3. Figure 2 illustrates the interaction of the locking member 224 and arc plate 402.

With respect to dependent claim 4, the integrally molded assembly of the first and second support members, 112 and 114 respectively, including first and second securing ledges 210, stop member 218 and locking member 224 is claimed. The integrally molded arc stack housing 102 is described in lines 16-19 of page 4, and is shown in Figures 1 and 3.

With respect to independent claim 5, specification references for the first and second support members (housing walls 112 and 114) and first through fourth securing ledges 210 are as described above in reference to claim 1. Independent claim 5 further defines the stop member 218 as being "deformable", as described on page 3 in lines 22-26 of the specification. Independent claim 5 further defines the locking member 224 as having a resilient member and a tab 222, as described on page 3 in lines 26-28 and on page 4 in lines 16-19 of the specification.

With respect to independent claim 6, specification references for the first and second support members (housing walls 112 and 114), first and second slots 216 and arc plate 402 are as described above in reference to claim 1. Independent claim 6 further defines the back stop member 218 and the locking member 224 as being secured in spaced relationship with the first wall 112, as shown in Figures 1 and 3. Independent claim 6 also defines the arc plate 402 as being "secured by said first slot, said second slot, said back stop member and said locking member." This securing structure is described in

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the specification starting at line 32 of page 3 and continuing through line 10 of page 4, and is shown in Figure 2, with respect to arc plate 402.

With respect to dependent claim 7, the resilient back stop member 218 and it's interaction with the arc plate 402 is claimed. The description of the interaction between the back stop member 218, arc plate 402 and locking member 224 begins in line 32 of page 3 and continues through line 2 of page 4 and is illustrated with respect to arc plate 402 in Figure 2.

With respect to dependent claim 8, the resilient locking member 224 and it's elements are claimed. The locking member is described in detail starting on line 26 of page 3 continuing through line 4 of page 4. Lines 16-19 of page 4, further describe the integrally molded arc stack housing 102 as including the ledge surfaces 212 and 214, locking arm 224 and locking tab 222, thereby fixedly attaching at least one end of the locking arm to the securing ledge 210. This construction is shown in Figures 1 and 3. Figure 2 illustrates the interaction of the locking member 224 and arc plate 402.

With respect to independent claim 9, specification references for the first and second support members (housing walls 112 and 114), first and second slots 216 and arc plate 402 are as described above in reference to claim 6. Independent claim 9 further defines locking member 224 as having a tab with an inside face in contact with the arc plate, as described on page 3 lines 26-28. Independent claim 9 further defines the back stop member 218 as being deformed and in contact with the arc plate whereby the back stop member pushes the arc plate towards the locking member tab, as described in the specification starting in line 32 of page 3 and continuing through line 2 of page 4. This is also illustrated with respect to arc plate 402 in Figure 2.

With respect to dependent claim 10, the integrally molded assembly of the first and second support members, 112 and 114 respectively, including first and second securing ledges 210, which define slots 216, stop member 218 and locking member 224 is claimed. The integrally molded arc stack housing 102 is described in lines 16-19 of page 4, and is shown in Figures 1 and 3.

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With respect to independent claim 11, specification references for the arc stack housing 102, having first and second members (housing walls 112 and 114) secured in spaced relation are found in lines 18-20 of page 2 and the slot 216 define by the spaced apart members is described in lines 11 and 12 of page 4 wherein the housing is indicated as having a mirrored structure. The slot insertion and back ends are shown in Figure 2 where the arc plate 402' is partially inserted. The back stop 218 is described in lines 22 and 23 of page 3, and the locking member 224 is described in lines 26-28 of page 3. The operation of the stop member and locking member with respect to the inserted arc plate starts in line 32 of page 3 and continues through line 2 of page 4.

With respect to independent claim 12, the specification reference for the arc stack housing 102 is found in lines 12-21 of page 3. The specification reference for the arc plate 402 is found in lines 5-8 of page 3 and it is shown in Figure 4. The description of the means for securing the arc plate in the arc stack, which includes slot 216, locking tab 222, locking arm 224 and stop member 218, begins in line 22 of page 3 and continues through line 4 of page 4. The means for securing is shown in Figure 2, with respect to arc plate 402.

With respect to dependent claim 13, the means for preventing vibration of the arc plates 402 in the arc stack housing 102 is defined in lines 21-23 of page 4 of the specification. This means is the spring actions of the locking arm 224 and the rear stop 218 opposing one another such that the arc plate 204 is captured between them, as shown in the lower most slot of Figure 2, and forced against the lower surface 212 of securing ledge 210, thereby preventing vibration of the arc plate 402.

## VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claim 6 stands rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Uchida et al.

Claims 12 and 13 stand rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Uchida et al.

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Claims 12 and 13 stand rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Maier et al.

Claims 1 and 2 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Uchida et al.

Claims 3 and 4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Uchida et al, as applied to claim 1, and further in view of Madock.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Uchida et al and Madock.

Claims 7 and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Uchida et al, as applied to claim 6, and further in view of Madock.

Claims 9 and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Uchida et al and Madock.

Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Uchida et al.

### **VIII. ARGUMENTS**

Examiner Fitzgerald has rejected Claim 6 under 35 U.S.C. § 102(b) as being anticipated by Uchida et al., U.S. Patent Number 5,589,672. To anticipate, "the reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present." (M.P.E.P. 706.02). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegeal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (M.P.E.P. 2131). "The identical invention must be shown in as complete detail as contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) (M.P.E.P. 2131). "The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required." *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990) (M.P.E.P. 2131). Applicant agrees that Uchida teaches a circuit breaker having provisions for supporting arc plates, wherein some

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features are similar, but not identical, to certain features of the present invention. In the Detailed Action of the Final Office Action, Examiner Fitzgerald has provided modified versions of Uchida's Figures 2, 4, 8(B), 9(B), 10 and 12(B), which include the Examiner's own reference numerals and descriptions for certain elements of Uchida's arc housing. Applicant agrees with Examiner Fitzgerald's suggestion in paragraph 2 of the Action, that his elements **S1** and **S2** represent slots formed in the first and second side walls **14a**. Examiner Fitzgerald also suggests that his element **C**, which is not discussed at all by Uchida, is a back stop member. However, it can not be a back stop member secured in spaced relationship to the first wall, as suggested by Examiner Fitzgerald and as defined in claim 6 of the present invention. It is clearly obvious from Examiner Fitzgerald's Figures 4 and 9(B), that element **C** is the terminating end of slots **S1** and **S2**, and therefore is defined within the side wall **14a** itself, *not* in spaced relation to the side wall. Examiner Fitzgerald also suggests that Uchida "further discloses an additional embodiment having resilient stop members (21c) (Figs. 12A-12D) with tabs (21f) engaging the first end of the arc plates, fixing them in place." Uchida does not teach or suggest that element **21c** is a resilient stop member with tabs **21f** engaging the first end of the arc plates to fix them in place. Uchida's element **21c**, shown only in Figures 8A and 9B, is defined as "a rectangular blocking board 21c closing an opening between the pressing boards 21a through a space in the front and rear directions" (Col.8, lines 31-33). Uchida, in Column 8, lines 38-39, describes element **21f** as "a pair of hooks 21f extending from the upper ends of the pressing board 21a." Uchida further defines the function of these "hooks" **21f** in Column 8, lines 48-50, as "engaging steps 14f are formed to fit to the hooks 21f on the protection board 21 on the upper part of the side wall 14a." Uchida's Figure 8(B) clearly shows the relationship between elements **21c** and **21f**, while Figure 9(B) shows the proper relationship of these two elements with respect to the arc plates **2** and side walls **14a**. Uchida does not teach or suggest that his blocking board **21c** is a resilient stop member, or that his hooks **21f** engage or in any way contacts his arc plates **2**, nor are they a part of or attached to the blocking board **21c**. Further, Examiner Fitzgerald's element **C**, being a terminating end of a slot formed in the wall **14a**, can not be resilient unless the material from which the wall **14a** is constructed is resilient (elastic). One skilled in the art would recognize that this is not desirable since the arc stack wall must contain the gas pressure

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developed during the opening of the electrical contacts of a switch or circuit breaker. For the reasons stated above, at least three defining elements of claim 6, a backstop being both resilient and secured in spaced relation to the side wall and a locking member being secured in spaced relation to the side wall, are not taught or suggested by Uchida. Further, the elements of Uchida are not arranged as required by claim 6. Therefore, Uchida does not meet the requirements set forth in M.P.E.P. 706.02 or M.P.E.P. 2131 for an anticipation rejection of claim 6 under 35 U.S.C. § 102(b).

Examiner Fitzgerald has rejected Claims 12 and 13 under 35 U.S.C. § 102(b) as being anticipated by Uchida et al., U.S. Patent Number 5,589,672, and Maier et al., U.S. Patent Number 4,612,426. To anticipate, "the reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present." (M.P.E.P. 706.02). "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (M.P.E.P. 2131). "The identical invention must be shown in as complete detail as contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) (M.P.E.P. 2131). "The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required." *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990) (M.P.E.P. 2131). MPEP 2114 states, "Even if the prior art device performs all the functions recited in the claim, the prior art cannot anticipate the claim if there is any structural difference. It should be noted, however, that means plus function limitations are met by structures which are equivalent to the corresponding structures recited in the specification." Since, claims 12 and 13 are means-plus-function claims as defined under 35 U.S.C. §112, sixth paragraph, which states "An element in a claim for a combination may be expressed as a means or step for performing a specified function without recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." In *In re Donaldson Co.*, the Federal Circuit said,

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"Per our holding, the 'broadest reasonable interpretation' that an examiner may give means-plus-function language is that statutorily mandated in paragraph six. Accordingly, the PTO may not disregard the structure disclosed in the specification corresponding to such language when rendering a patentability determination." MPEP 2181 I. states, "The USPTO must apply 35 U.S.C. §112, sixth paragraph in appropriate cases, and give claims their broadest interpretation, in light of and consistent with the written description of the invention in the application." MPEP 2181 I. further defines a 3-pronged analysis of claims to determine if 35 U.S.C. §112, sixth paragraph is invoked. MPEP 2182 states, "If the specification defines what is meant by the limitation for the purposes of the claimed invention, the examiner should interpret the limitation as having that meaning. If no definition is provided, some judgement must be exercised in determining the scope of the limitation." Claims 12 and 13 both meet the criteria of the 3-pronged analysis. Therefore, since claims 12 and 13 are means-plus-function claims, to anticipate, the cited art must disclose that structure set forth in the specification as the "means", or it's equivalent, in as complete detail as contained in the specification. See 35 U.S.C. §112, sixth paragraph; see also *B. Braun Medical, Inc. v. Abbott Lab.*, 124 F.3d 1419, 1424, 43 U.S.P.Q.2d 1896, 1899 (Fed. Cir. 1997) MPEP § 2181.

Claim 12 anticipated by Uchida

Examiner Fitzgerald has suggested that Uchida's element 2c anticipates the means for securing the arc plate in the arc stack housing. Uchida defines element 2c in column 7, lines 34-35, as nails outside the tip of both arms 2a which bite into the bottoms of the slots 15. These "nails" are shown in Figure 5 as barbs extending from the outside edges of the arc plate arms 2a. The means, as described in paragraphs 14, 15 and 16 of the specification, include the securing ledges 210 that define the slots 216, the stop members 218, and locking arm 224 with locking tab 222. All of these elements are integrally molded parts of the arc stack housing 102 (specification paragraph 18). As indicated above, the "nails" 2c are an integral part of the arc plate, not the housing. Therefore, other than the slots 15, which receive the arc plates, Uchida does not teach or suggest any elements that would be equivalent to the elements disclosed in the specification as the "means for securing said arc plates in said arc stack housing". Uchida does not meet the

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requirements set forth in MPEP 2114, 2131, 2181 or 2182, for anticipation of a mean-plus-function claim and cannot anticipate claim 12.

Claim 13 anticipated by Uchida

Examiner Fitzgerald has suggested that Uchida's element **2c** provided the means for preventing vibration of the arc plates. As indicated in MPEP 2114, even if the prior art device performs all the claimed functions it cannot anticipate the claim if there is any structural difference. Uchida's means incorporates an integral nail **2c** extending from each side of the arc plate at one end of the arc plate (Figure 5). The arc plate must be forcefully inserted into a slot defined in the housing. In column 7, lines 35-40, Uchida teaches that outside dimension of the nails are slightly greater than the width of the slot **15** in which the arc plate **2** is inserted. He further teaches that the two arms **2a** of the arc plate deform as the arc plate is forcibly inserted into the slot **15**. The means for preventing vibration, as disclosed in paragraph 18 of the present application, is "the spring action of the locking arm 224 and the spring action of the rear stop 218", which serve to capture and prevent the arc plate **402** from vibrating in the housing **102**. Uchida discloses no structure or equivalent thereof, capable of capturing and preventing the arc plate **402** from vibrating in the housing **102**. Therefore, Uchida cannot anticipate claim 13, as suggested by Examiner Fitzgerald.

Claim 12 anticipated by Maier

Examiner Fitzgerald has suggested that Maier's element **49** and **51** anticipate the means of claim 12 for securing the arc plate in the arc stack housing. Maier defines elements **49** and **51**, in column 4, lines 54-58, as "laterally protruding prongs such as T-shaped tabs **49** that project through a plurality of laterally-extending slot openings **51** in the side panels **48**". Maier further discloses in column 4, lines 59-62 and Figure 3, that these tabs and slots by themselves will not retain the arc plates within the housing but require a separate "key member **52**" that forces the T-shaped tabs **49** to be wedged into an interlocking position with the slots **51**. This is accomplished by laterally moving the arc plates as the key is inserted between a side **57** of the arc plate and side panels **48** of the

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arc chute assembly 22. This operation not only secures the arc plates in the housing, it is required to hold the arc chute assembly 22 together. The means, as described in paragraphs 14, 15 and 16 of the specification of the present application, include the securing ledges 210 that define the slots 216, the stop members 218, and locking arm 224 with locking tab 222. All of these elements are integrally molded parts of the arc stack housing 102 (specification paragraph 18). Maier does not teach or suggest a slot performing the function of slot 216, nor does he teach or suggest that the retaining means be integral components of the arc stack housing (Maier's side panels 48). Therefore, Maier does not teach or suggest any elements that would be equivalent to the elements disclosed in the specification as the "means for securing said arc plates in said arc stack housing". Maier does not meet the requirements set forth in MPEP 2114, 2131, 2181 or 2182, for anticipation of a mean-plus-function claim and cannot anticipate claim 12.

Claim 13 anticipated by Maier

Examiner Fitzgerald has suggested that Maier's elements 49 and 51 provided the means for preventing vibration of the arc plates. As indicated in MPEP 2114, even if the prior art device performs all the claimed functions it cannot anticipate the claim if there is any structural difference. Maier's means for preventing vibration of the arc plates is a combination of T-shaped tabs 49 integral to the arc plates, slots 51 defined in the arc housing sides 48 and a key member 52, which is required to forcibly interlock the tabs in the slots. The means for preventing vibration, as disclosed in paragraph 18 of the present application, is "the spring action of the locking arm 224 and the spring action of the rear stop 218", which serve to capture and prevent the arc plate 402 from vibrating in the housing 102. Maier discloses no structure or equivalent thereof, capable of "capturing and preventing the arc plate 402 from vibrating in the housing 102 in the manner described. Therefore, Uchida cannot anticipate claim 13, as suggested by Examiner Fitzgerald.

Examiner Fitzgerald has rejected Claims 1 and 2 under 35 U.S.C. § 103(a) as being unpatentable over Uchida et al. M.P.E.P. 706.2(j) states that three basis criteria must be met for a *prima facie* obviousness rejection of claims under 35 U.S.C. §103(a). First, there

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must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on the applicant's disclosure. M.P.E.P. 2142 states the following with respect to *prima facie* obviousness rejections: "Knowledge of applicant's disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the 'differences,' conduct the search and evaluate the 'subject matter as a whole' of the invention. The tendency to resort to 'hindsight' base upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art." "The ultimate determination of patentability is based on the entire record, by a preponderance of evidence, with due consideration to the persuasiveness of any arguments and secondary evidence." *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). The legal standard of 'a preponderance of evidence' requires the evidence to be more convincing than the evidence which is offered in opposition to it. With regard to rejections under 35 U.S.C. §103, the examiner must provide evidence which as a whole shows that the legal determination sought to be proved (i.e., the reference teaching establishing a *prima facie* case of obviousness) is more probable than not." "Facts established by rebuttal evidence must be evaluated along with the facts on which the conclusion of obviousness was reached, not just the conclusion itself." *In re Eli Lilly & Co.*, 902F2d943, 14 USPQ2d 1741 (Fed. Cir. 1990). M.P.E.P. 2143.03 further states: "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Claim 1

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Examiner Fitzgerald has suggested in paragraph 5 of the Final Action that, as in his 35 U.S.C. § 102(b) anticipation rejection of claim 6, Uchida teaches all of the elements and limitations of claim 1. Claim 1 differs from claim 6, in that it defines securing ledges "protruding from said first support member toward said second support member", and that the securing ledges define slots adapted to receive arc plates. Webster's New Universal Unabridged Dictionary defines the word "protrude" as "to thrust out, or forth; to cause to move outward or to project" and "to jut out". Examiner Fitzgerald suggests that his slots **S1** and **S2**, which were formed in the side walls **14a** in his rejection of claim 6, are now defined by securing ledges (his reference numerals **A1**, **A2**, **B1** and **B2** of modified Figure 2) that protrude from side walls **14a**. Uchida's Figures 7(A) and particularly sectional view 7(B) provide a more accurate view wherein the slots **15** are obviously molded into the side walls **14a**, and therefore can not be "protruding from" the side wall, as defined in claim 1, and shown in Figures 1 and 3 of the present application. Therefore, Uchida does not teach or suggest securing ledges that protrude from the support members as defined in claim 1 of the present application. Examiner Fitzgerald has further suggested that his element **C** is the stop member engaging the first end of the arc plate **2** and Uchida's element **21g** is the locking element engaging the second end of the arc plate **2**. However, the stop member, as defined in claim 1, must be resilient. Examiner Fitzgerald has not addressed this restriction in his rejection of claim 1. His element **C**, as shown in modified Figures 4 and 9(B), is clearly the terminating end of the slot **15**, which is molded into the side wall **14a**, and therefore, cannot be resilient unless the material of the insulator **14** is soft or pliable enough to be elastic. One skilled in the art would understand that an elastic arc plate housing could cause an unsafe condition in that flexing of the housing caused by gas pressure developed during current interruption could allow displacement of the arc plates. Such displacement could cause a malfunction of the switch or circuit breaker, or at least improper operation of the arc plates, and is therefore not acceptable. Examiner Fitzgerald's rejection of claim 1 does not meet the basic requirements for an obviousness rejection under 35 U.S.C. § 103 as required in M.P.E.P. 706.2(j) and M.P.E.P. 2143.03

Claim 2

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Examiner Fitzgerald has specifically indicated, that with "regards to claim 2, Uchida et al. further discloses an additional embodiment having resilient stop members (21c) (Figs. 12A-12D) with tabs (21f) engaging the first end of the arc plates, fixing them in place." Claim 2 also includes a restriction of being "deformable", which has not been addressed by Examiner Fitzgerald. Uchida does not teach or suggest that element **21c** is a resilient stop member with tabs **21f** engaging the first end of the arc plates **2** to fix them in place. Uchida's element **21c**, shown only in Figures 8A and 9B, is defined as "a rectangular blocking board **21c** closing an opening between the pressing boards **21a** through a space in the front and rear directions" (Col.8, lines 31-33). Uchida, in Column 8, lines 38-39, describes element **21f** as "a pair of hooks **21f** extending from the upper ends of the pressing board **21a**." He further defines the function of these "hooks" **21f** in Column 8, lines 48-50, as "engaging steps **14f** are formed to fit to the hooks **21f** on the protection board **21** on the upper part of the side wall **14a**." Uchida's Figure 8(B) clearly shows the relationship between elements **21c** and **21f**, while Figure 9(B) shows the proper relationship of these two elements with respect to the arc plates **2** and side walls **14a**. Uchida does not teach or suggest that his blocking board **21c** is resilient, deformable or a stop member, or that his hooks **21f** engage the arc plates **2** in any way, nor are they a part of or attached to the blocking board **21c**. Examiner Fitzgerald has further suggested that "it would have been obvious to one having ordinary skill in the art at the time the invention was made to reverse the resilient nature of the back stop with that of the locking member, since it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. *In re Einstein*, 8 USPQ 167." The applicant must assume that Examiner Fitzgerald is referring to Uchida's element **21c** as the resilient back stop, not his back stop **C**. *In re Einstein* and the current reference *In re Gasda*, 219 F.2d 449, 104 USPQ 400 (CCPA 1955) (M.P.E.P. 2144.04 VI) are specifically directed to a situations wherein two directly interacting elements (essential working parts), A and B, of the appellant's invention, are arranged such that element A operates element B. Significantly identical elements A and B, of the prior art reference, are arranged such that element B operates element A. Thus the appellant's invention is a "mere reversal of essential working parts". In Examiner Fitzgerald's suggested "reversal of essential working parts", Uchida's blocking board **21c** does not interact with, nor was it intended to

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interact with his projections 21g. Neither Einstein nor Gasda suggest that parts which do not or were not intended to interact with each other in the prior art reference would be an obvious "reversal of essential working parts" for one having ordinary skill in the art. Therefore, Examiner Fitzgerald's basis for the obviousness rejection of claim 2 is unfounded. Further, since Uchida's blocking board 21c is neither a resilient stop member nor a resilient locking member, there is no "essential working member", which meets the claimed limitation of being "resilient" that can be reversed.

Examiner Fitzgerald has rejected claims 3 and 4 under 35 U.S.C. § 103(a) as being unpatentable over Uchida et al., as applied to claim 1 above, and further in view of Madock, U.S. Patent Number 5,645,329. The Examiner has indicated that Uchida discloses a housing having all of the elements of claims 3 and 4 except for integrally molding the resilient back stop member and locking member.

### Claim 3

Examiner Fitzgerald has suggested that it would have been obvious to one skilled in the art at the time of the invention to modify Uchida by including the integrally molded stop and locking members of Madock. Applicant contends that Examiner Fitzgerald's proposed incorporation of the desired features of Madock into the circuit breaker housing of Uchida would produce an unsafe and inoperable device. First, Uchida does not teach or suggest all of the elements and limitations of claim 1, particularly the securing ledges 210 that protrude from the support members (side walls 112) to define the slots 216, which receive the arc plates 402. Second, according to Madock, the bottom wall 12 is formed from the spring 104, retaining member 106 and cantilevered portion 108 (Column 3, lines 18-23), which includes ribs 82-90 that project upward from the wall 12 (Column 3, lines 1-3). Therefore, the resilient member (cantilevered portion 108) is an integral part of the wall 12 and can not be secured to the securing ledges (ribs 82-90) as suggested by Examiner Fitzgerald and required by the limitations of claim 3. Further, the configuration as taught by Madock requires that the cantilevered portion 108 be formed between slots 110 and 112 to permit deflection of the cantilevered portion. One skilled in the art would

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understand that such slots in the wall of an arc plate housing would permit hot gases, plasma and small metallic particles produced during the opening of electrical contacts to exit the housing without passing through the intended passage containing the arc plates. The exit of these gases or particles through the arc plate housing would result in phase to ground or phase to phase arcing, thereby causing a catastrophic failure of the switch or circuit breaker. Therefore, Examiner Fitzgerald's suggested combination of Uchida and Madock does not meet the three requirements of M.P.E.P 2142 for *prima facie* obviousness. Since there is no teaching or suggestion in either reference for the Examiner's suggested combination, one skilled in the art would not have a reasonable expectation of success from the proposed combination and all of the claim limitations are not taught or suggested in the proposed combination. Further, M.P.E.P. 2143.01 states that "the proposed modification cannot render the prior art unsatisfactory for its intended purpose". As indicated above, incorporating the retaining features of Madock into the circuit breaker housing of Uchida would make render the modified Uchida device unsafe, and therefore unsatisfactory for its intended purpose.

Claim 4

Examiner Fitzgerald has suggested that "forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893)." Applicant suggests that the housing of Madock is made of four separate parts for a reason. A mold for a molded part is generally made from two or more separable parts, which when assembled define a void in the shape of the part to be molded. The molding material is injected into the mold filling the defined void. The mold parts must then be separated to release the molded part. The design of a mold for an intricate part is difficult and requires a very high level of knowledge relating to mold design and particular qualities of the material from which the molded part will be made. It would not be unusual for one skilled in a particular art, such as electrical devices, to design an integral part which would perform the necessary function, but could not be molded as an integral part because of limitations in the mold design. The device of Madock is assembled from four parts because designing a mold for making an integral housing would be extremely difficult and expensive, if not impossible. The fact that the

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finished device of Madock defines a void (the cavity in which CDs are stored), which includes opposed projections (the springs 104 and retaining members 106) inside the void, would require a large number of parts to define the void for the part. This would make the cost of designing and making the mold very expensive, which would increase part cost. The same would be true of an integral arc plate housing combining the features of Uchida and Madock, as suggested by Examiner Fitzgerald. Examiner Fitzgerald has also stated some reasons for his suggested combination of Uchida and Madock. First, referring to Madock Col. 4, lines 31-34, the Examiner has suggested that it would substantially reduce the cost of manufacturing the housing. Madock specifically teaches in Col. 4, lines 31-34, that "because the two side walls 13 and 14 have the same configuration, they may be formed from the same mold thereby substantially reducing the cost of manufacturing the holder 10." This is not a suggestion that any combination of parts into one integral part will substantially reduce manufacturing cost. In fact the complexity of the mold, as discussed above, would drive the cost up, not down. Second, referring to Madock Col. 1, lines 39-42, the Examiner has suggested that the locking members 106 of Madock would allow "partial ejection of the arc plate from the housing so that it may be easily grasped by a user". In Examiner Fitzgerald's *Response to Arguments* paragraph 12 of the Final Office Action, he has stated that "Applicant's arguments with respect to the Madock reference having features or capabilities not stated as objectives of the applicant's invention is irrelevant. Additional features or capabilities of the Madock teaching, in no way hinders the structure and/or function of that structure." Applicant disagrees, Examiner Fitzgerald's suggestion that partial ejection of arc plates would be a desirable feature and therefore, a reason for his suggested modification of Uchida is not appropriate for Uchida or any switch or circuit breaker device. In fact, one skilled in the art would recognize that this is an unacceptable and dangerous operation that could cause destruction of the arc stack housing and any switch or contact to which it is attached. Partial ejection of an arc plate could cause the arc plate to interfere with the required opening and closing of a switch blade or circuit breaker contact. This could result in a catastrophic failure of the switch or circuit breaker. It also could severely injure anyone attempting to remove the arc plates. Applicant contends that there is no suggestion for the Examiner's combination in either Uchida or Madock, and further, that the suggested

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combination would produce a device which could not perform the intended function of Uchida, or the present invention, in a safe and dependable manner. Applicant contends that the suggested combination of Uchida and Madock does not involve only routine skill in the art. For the reasons stated above, Examiner Fitzgerald's suggested combination of Uchida and Madock does not meet the requirements of M.P.E.P. 706.2(j) and the requirements of M.P.E.P. 2143.01 for an obviousness rejection under 35 U.S.C. § 103(a).

Examiner Fitzgerald has rejected independent claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Uchida et al., and Madock. Claim 5 is an independent claim having all of the restrictions of claims 1, 2 and 3. Therefore, the arguments presented above in support of claims 1, 2 and 3, are applicable to claim 5. In summary, Uchida does not teach or suggest securing ledges that protrude from the support members and define slots for receiving arc plates. There is no suggestion or motivation in Uchida, Madock or the knowledge of one of ordinary skill in the art to make Examiner Fitzgerald's suggested combination. There is no reasonable expectation of success in combining the two references to produce the claimed invention. The suggested combination does not teach or suggest all of the claimed limitations. Finally, the suggested combination would produce a device that could not safely and dependably perform the intended function of the original device. Therefore, the Examiner's suggested combination of Uchida and Madock, with respect to claim 5, does not meet the three basic requirements of M.P.E.P. 706.2(j) and the requirements of M.P.E.P. 2143.01 for an obviousness rejection under 35 U.S.C. § 103(a).

Examiner Fitzgerald has rejected claims 7 and 8, both dependent from claim 6, under 35 U.S.C. § 103(a) as being unpatentable over Uchida et al., as applied to claim 6, and further in view of Madock. Examiner Fitzgerald has suggested that Uchida teaches all of the elements of claim 6, but does not disclose the elements of claims 7 and 8. Applicant's arguments in response to the 35 U.S.C. § 102(b) rejection of claim 6 are believed to overcome the anticipation rejection of claim 6. Therefore, claims 7 and 8, being

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dependent from claim 6, would be allowable according to M.P.E.P. 2143.03, if claim 6 is not obvious under 35 U.S.C. § 103. Further, the defining elements of claims 7 and 8 are substantially similar to those of claims 3 and 4, respectively, and Examiner Fitzgerald's rejections of claims 3 and 4 based on the combination of Uchida and Madock are nearly identical to his rejections of claims 7 and 8. Therefore, the applicant contends that the arguments presented above in support of claims 3 and 4, are also applicable to the rejection of claims 7 and 8. Further, Examiner Fitzgerald has again suggested that "allowing for the partial ejection of the arc plate from the housing so that it may be easily grasp by a user (Mdock: col. 1, lines 39-42)" is a reason for modifying Uchida to incorporate the retaining means of Madock. As stated above, anyone skilled in the art would understand that this is an unacceptable and dangerous operation that could cause destruction switch or contact and sever injury to the user. Again, there is no teaching in either Uchida or Madock which suggest the Examiner's combination to produce the invention as claimed. Therefore, the Examiner's suggested combination of Uchida and Madock, with respect to claims 7 and 8, does not meet the three basic requirements of M.P.E.P. 706.2(j) for an obviousness rejection under 35 U.S.C. § 103(a).

Examiner Fitzgerald has rejected claims 9 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Uchida et al., and Madock.

#### Claim 9

Independent claim 9 includes all of the limitations set forth in independent claim 6 and dependent claims 7 and 8. Therefore, applicant's arguments as presented above in response to the 35 U.S.C. § 102(b) rejection of claim 6 and the 35 U.S.C. § 103(a) rejection of claims 7 and 8 are believed to overcome the 35 U.S.C. § 103(a) rejection of claim 9. Further, Examiner Fitzgerald has suggested, as in the rejection of claim 3 above, that it would have been obvious for one skilled in the art to modify Uchida by employing "the integrally molded wall and all of the elements taught by Madock". The argument set forth above in response to the rejection of claim 3 are relevant to claim 9 also. Again, there is no teaching in either Uchida or Madock which suggest the Examiner's combination to

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produce the invention as claimed. Therefore, the Examiner's suggested combination of Uchida and Madock with respect to claim 9 does not meet the three basic requirements of M.P.E.P. 706.2(j) for an obviousness rejection under 35 U.S.C. § 103(a).

Claim 10

Examiner Fitzgerald has used the same argument in rejecting claim 10 as he used in rejecting claim 4 above. The arguments set forth above in response to the rejection of claim 4 are also applicable to claim 10. Again, there is no teaching in either Uchida or Madock which suggest the Examiner's combination to produce the invention as claimed. Therefore, the Examiner's suggested combination of Uchida and Madock with respect to claim 10 does not meet the three basic requirements of M.P.E.P. 706.2(j) for an obviousness rejection under 35 U.S.C. § 103(a).

Examiner Fitzgerald has rejected Claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Uchida et al. Examiner Fitzgerald has suggested that Uchida teaches all of the elements and limitations of claim 11, "except for the back stop being resilient." In his rejection, Examiner Fitzgerald has, as in his rejection of claim 2, suggested that it would be obvious for one having ordinary skill in the art to reverse the resilient nature of the backstop (Examiner Fitzgerald's element C in Figures 4 and 9(B)) with that of the locking member (Uchida's elements 21g in Figure 8(B) and 22c in Figure 12(B)), based on *In re Einstein*, 8 USPQ 167. First, Uchida's elements 21g and 22c are employed in two different embodiments of his invention. The protection board 21 of which 21g is a part and the insulation partition 22 of which 22c is a part, are not interchangeable between the two embodiments because of functional requirements of their respective pressing projections, 21g and 22f. The pressing projections 21g are all of the same length (Figure 9(B)) because the location of the terminating point of the slot 15 (Examiner Fitzgerald's element C) determines the position of the grid 2 (arc plate) in the housing (Figure 9(B)). The "pressing projections 22f are formed corresponding to the end surface positions of the vertically piled-up grids such that the protruding lengths thereof gradually increase from the top to the bottom." (Column 9, lines 38-42) (Figure 12(B)) Thus, the length of the

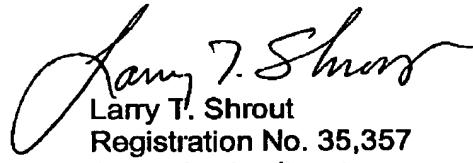
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pressing projections **22f** control the position of the grids **2** in the housing **14**. (Figure 14) Therefore, Examiner Fitzgerald's suggestion that Uchida's combined elements **21g** and **22c** are a resilient locking member is inaccurate. *In re Einstein* and the current reference *In re Gasda*, 219 F.2d 449, 104 USPQ 400 (CCPA 1955) (M.P.E.P. 2144.04 VI A.) are specifically directed to a situations wherein two directly interacting elements (essential working parts), A and B, of the appellant's invention, are arranged such that element A operates element B. Significantly identical elements A and B, of the prior art reference, are arranged such that element B operates element A. Thus the appellant's invention is a "mere reversal of essential working parts". Neither of Uchida's pressing projections, **21g** or **22f**, directly interact with, nor were they it intended to interact with Examiner Fitzgerald's back stop **C** in such a manner that any "essential working parts" could be reversed, as suggested by Examiner Fitzgerald. Neither Einstein nor Gasda suggest that parts which do not or were not intended to interact with each other in the prior art reference would be an obvious "reversal of essential working parts" for one having ordinary skill in the art. Therefore, Examiner Fitzgerald's basis for the obviousness rejection of claim 11 is unfounded. Further, although Uchida indicates that his pressing projections **21g** and **22f** press on the end surfaces of the grids **2**, he does not teach or suggest that they could be located at the terminating end (Examiner Fitzgerald's back stop **C**) of the slot **15**. Therefore, there is no teaching or suggestion in Uchida of a rearrangement of parts. M.P.E.P. 2144.04 VI C. states "The mere fact that a worker in the art could rearrange the parts of the reference device to meet the terms of the claims on appeal is not by itself sufficient to support a finding of obviousness. The prior art must provide a motivation or reason for the worker in the art, without benefit of appellant's specification, to make the necessary changes in the reference device." *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ351, 353 (Bd. Pat. App. & Inter. 1984). A mere reversal of parts, as suggested by Examiner Fitzgerald, or a rearrangement of parts, without other engineering and design considerations relating to positioning of the grids **2**, would result in a situation wherein Uchida's grids **2** could be incorrectly positioned in the slots **15**, thereby interfering with the proper operation of the switch blades or circuit breaker contacts.

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Based on these arguments presented herein, it is respectfully requested that the Honorable Board of Patent Appeals and Interferences reverse (or otherwise correct) the final rejection of claims 1-13.

Respectfully submitted,



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### CLAIMS APPENDIX

**Claim 1.** A housing for securing an arc plate, said arc plate including a first longitudinal edge, an opposed second longitudinal edge, a notched first end, and a second end opposed to said notched first end, said housing comprising:

a first support member;

a second support member secured in spaced relation to said first support member;

a first securing ledge protruding from said first support member and toward said second support member, said first securing ledge having a lower surface;

a second securing ledge protruding from said first support member and toward said second support member, said second securing ledge having an upper surface, said first securing ledge lower surface and said second ledge upper surface defining a first slot adapted to receive said first longitudinal edge of said arc plate;

a third securing ledge protruding from said second support member and toward said first support member, said third securing ledge having a lower surface;

a fourth securing ledge protruding from said second support member and toward said first support member, said fourth securing ledge having an upper surface, said third securing ledge lower surface and said fourth securing ledge upper surface defining a second slot adapted to receive said second longitudinal edge of said arc plate;

a stop member, said stop member being resilient, said stop member engaging said first end of said arc plate; and

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a locking member engaging said second end of said arc plate.

**Claim 2.** The housing of Claim 1 wherein said stop member is resilient and deformable.

**Claim 3.** The housing of Claim 1 wherein said locking member includes a resilient member and a tab, said resilient member having a first end fixedly attached to said first securing ledge and having a second end connected to said tab, said tab having an inside face for securing said arc plate in said housing.

**Claim 4.** The housing of Claim 1 wherein said first support member, said second support member, said first securing ledge, said second securing ledge, said stop member, and said locking member form an integral molded assembly.

**Claim 5.** A housing for securing an arc plate, said arc plate including a first longitudinal edge, an opposed second longitudinal edge, a notched first end, and a second end opposed to said notched first end, said housing comprising:

a first support member;

a second support member secured in spaced relation to said first support member;

a first securing ledge protruding from said first support member and toward said second support member, said first securing ledge having a lower surface;

a second securing ledge protruding from said first support member and toward said second support member, said second securing ledge having an upper surface, said first securing ledge lower surface and said ledge upper surface defining a first slot adapted to receive said first said longitudinal edge of said arc plate;

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a third securing ledge protruding from said second support member and toward said first support member, said third securing ledge having a lower surface;

a fourth securing ledge protruding from said second support member and toward said first support member, said fourth securing ledge having an upper surface, said third securing ledge lower surface and said fourth securing ledge upper surface defining a second slot adapted to receive said second longitudinal edge of said arc plate;

a stop member engaging said first end of said arc plate, said stop member being resilient and deformable; and

a locking member having a resilient member and a tab, said resilient member having a first end fixedly attached to said first securing ledge and having a second end connected to said tab, said tab having an inside face in contact with said arc plate.

**Claim 6. An apparatus for quenching an arc, said apparatus comprising:**

a first wall;

a second wall secured in spaced relation to said first wall;

a first slot formed in said first wall and opening toward said second wall;

a second slot formed in said second wall and opening toward said first wall;

a back stop member secured in spaced relation to said first wall, said back stop member being resilient;

a locking member secured in spaced relation to said first wall;

an arc plate in slidable communication with said first slot and said second slot;

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whereby said arc plate is secured by said first slot, said second slot, said back stop member, and said locking member.

**Claim 7.** The apparatus of Claim 6 wherein said back stop member is resilient and deformable, said back stop member being deformed and in contact with said arc plate, whereby said back stop member forces said arc plate against said locking member.

**Claim 8.** The apparatus of Claim 6 wherein said locking member includes a resilient member and a tab, said resilient member having a first end fixedly attached to said first wall and having a second end connected to said tab, said tab having an inside face in contact with said arc plate.

**Claim 9.** An apparatus for quenching an arc, said apparatus comprising:

a first wall;

a second wall secured in spaced relation to said first wall;

a first slot formed in said first wall and opening toward said second wall;

a second slot formed in said second wall and opening toward said first wall;

an arc plate in slidable communication with said first slot and said second slot;

a locking member secured in spaced relation to said first wall and including a resilient member and a tab, said resilient member having a first end fixedly attached to said first wall and having a second end connected to said tab, said tab having an inside face in contact with said arc plate;

a back stop member secured in spaced relation to said first wall, said back stop member being resilient and deformable, said back stop member being deformed and in

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contact with said arc plate, whereby said back stop member pushes said arc plate towards said tab;

whereby said arc plate is secured by said first slot, said second slot, said back stop member, and said locking member.

**Claim 10.** The apparatus of Claim 9 wherein said first slot, said second slot, said back stop member, and said locking member form an integral assembly.

**Claim 11.** An apparatus for quenching an arc, said apparatus comprising:  
an arc stack housing having a first member secured in spaced relation to a second member, said first member and said second member defining a slot having a back end and an insertion end;

a back stop positioned at said back end, said back stop being resilient;  
a locking member positioned at said insertion end;  
an arc plate insertable into said slot, whereby said back stop pushes said arc plate against said locking member when inserted into said slot.

**Claim 12.** An apparatus for quenching an arc, said apparatus comprising:  
an arc stack housing;  
an arc plate; and  
means for securing said arc plate in said arc stack housing.

**Claim 13.** The apparatus of Claim 12 further comprising a means for preventing said arc plate from vibrating in said arc stack.

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THE EVIDENCE APPENDIX

None.

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RELATED PROCEEDINGS APPENDIX

None.

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